

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Title V Draft Permit No. V-99-074
HAYES LEMMERZ INTERNATIONAL—KENTUCKY, INC.
346 CENTRAL AVE., BOWLING GREEN, KY
May 11, 2000
KEITH METZKER, REVIEWER
Plant I.D. # 105-3960-0093
AFS I.D. # 21-227-00093
Application Log # F752

SOURCE DESCRIPTION:

The source uses coiled steel and other raw materials to make wheels. Coiled steel is first decoiled and cut to length. Subsequently, the steel is welded, cut, and trimmed. Then, the steel is shaped and formed into the component of a wheel. Components are then assembled. Once assembled, the wheels are precleaned, coated, dried, leak sealed (if required by customer), inspected, and prepared for shipping.

The process is generally environmentally inoffensive except for the particulates evolved during welding and the VOCs released from the wheel coating electrodeposition process. Details follow.

COMMENTS:

Type of control and efficiency

EP01 is the 4 DC welders and trimmers in rim lines 1, 2, and 3.

A Torit 2 DF 16 filter unit is used to control the welding emissions from these welders.

Additionally, emissions that are not captured by the filter unit will fall out in the building.

Given the additional control of the building, capture has been assumed to be 100%.

The application lists a control efficiency of 99.97% and since this degree of control is common for this type of control device, the listed efficiency has been assumed to be correct.

EP02 is a transfer press and rim rolling pit.

No emission controls are present.

EP03 is a Belco parts washer with 2-3.1 MMBtu/hr burners.

No emission controls are present.

EP04 is the 4 wheel assembly welders in assembly lines 1, 2, and 3.

A Torit 2 DF 8 filter unit is used to control the welding emissions from these welders.

Additionally, emissions that are not captured by the filter unit will fall out in the building.

Given the additional control of the building, capture has been assumed to be 100%.

The application lists a control efficiency of 99.97% and since this degree of control is common for this type of control device, the listed efficiency has been assumed to be correct.

Type of control and efficiency (continued)

EP05 is the 2-4 torch wheel assembly welders in assembly lines 5 and 7 and the 3 single torch wheel assembly welders in assembly line 6.

Each line uses a HEPA filter that is vented back into the building to control the welding emissions from these welders.

Additionally, emissions that are not captured by the filter unit will fall out in the building. Given the additional control of the building, capture has been assumed to be 100%.

Control efficiency has been assumed to be 99.9% since this degree of control is common for this type of control device.

EP06 is a 13 stage electrodeposition pretreatment line.

No emission controls are present.

EP07 is an epoxy electrodeposition tank, rinse, and ovens. The dehydration oven has 2-2 MMBtu/hr burners. The bake oven has 2-4.75 MMBtu/hr burners.

No emission controls are present.

EP08 is a 25.106 MMBtu/hr boiler.

Natural gas is the only fuel to be used in the boiler but propane may be used as a backup fuel (this will control PM emissions).

EP09 is leak sealant application.

No emission controls are present.

EP10 is a maintenance welder.

No emission controls are present.

EP11 is miscellaneous direct heating units rated at less than 1 MMBtu/hr each.

No emission controls are present.

EP12 is an emergency fire pump.

No emission controls are present.

EP13 is an acrylic electrodeposition tank, rinse, and oven. The oven has 5 burners: a 3.5 MMBtu/hr burner, a 5 MMBtu/hr burner, a 25.1 MMBtu/hr burner, and 2-3.1 MMBtu/hr burners.

No emission controls are present.

An uncontrolled "bench-scale" lab has not been assigned an emission point number.

An uncontrolled water deionization treatment cell has not been assigned an emission point number.

Several 46 hp propane powered fork trucks have also not been assigned an emission point number.

Storage of compressed gases (such as propane, argon, and CO₂) has also not been assigned an emission point number and no emission controls are present.

Emission factors and their source

Welding emission factors are from Lincoln Welding for L-56 wire and are near AP-42 estimates.

All natural gas combustion emission factors are from AP-42.

VOC emissions from EP02 are based on a mass balance provided in the Title V application. Based on the mass balance, 0.08% of the transfer press rim compounds (oil) was not recovered. Therefore, 0.08% of the rim rolling compound will be assumed to be emitted into the air. This assumption has also been made because low emissions are expected from materials with low vapor pressures.

VOC emissions from EP03 are based on Hayes Lemmerz estimate provided in the Title V application (1% emission factor for VOCs). The VOC used at EP03 has a low flash point similar to the oil used at EP02. Based on the material balance provided for EP02, a 1% VOC emission factor is a conservative estimate.

All VOCs used at EP06 will be assumed to be emitted.

Electrolytic cleaning processes have been described by AP-40 (p. 830) as having emissions that are inoffensive and of negligible volume. Therefore, all non-VOC emissions resulting from cleaning have been assumed to be negligible (this includes pretreatment of the wheels at EP03).

All VOCs and HAPs used at EP07 and EP13 have been assumed to be emitted.

Although all of the leak sealant components crosslink, 1% of the catalyst has been assumed to volatilize before the components are mixed. The resin has not been assumed to volatilize because the MSDS for the resin lists the evaporation rate as negligible.

Emissions from the “bench-scale” lab, the water deionization treatment cell, and the storage of compressed gases have been neglected.

Emissions from the fork trucks have been neglected because they are regulated as mobile sources.

Applicable regulations

401 KAR 59:010, New process operation, applies to EP01, EP02, EP03, EP04, EP05, EP06, EP07, EP10, and EP13 because these are process operations that were commenced after July 2, 1975 and these points are not subject to another particulate emission standard in 401 KAR Chapter 59.

EP06 will not be subject to 401 KAR 63:021, Existing sources emitting toxic air pollutants, even though permit C-93-019 contains a limitation on phosphoric acid emissions. AP-40 guidance on the cleaning process (emissions of negligible volume result) demonstrates that the limit is not necessary. Therefore, the phosphoric acid limit can be dropped. Additionally, 401 KAR 53:010, Ambient air quality standards, will not be significantly impacted by fluoride emissions from EP06 based on the same AP-40 guidance.

Applicable regulations (continued)

EP07 and EP13 are not subject to 401 KAR 59:225, New miscellaneous metal parts and products surface coating operations, because the source is not major for VOC as represented with production bottlenecks prior to the electrodeposition (source has identified a maximum wheel production of 18,000 wheels/day). A case-by-case MACT will not apply to EP13 since the source has elected to take limitations that require HAP emissions from EP13 to be less than 10 tons/yr. Future MACT for Miscellaneous Metal Parts will be likely to apply once promulgated since the HAP potential is major.

EP08 is subject to 401 KAR 59:015, New indirect heat exchangers, because the boiler has a heat input capacity greater than one million BTU/hr and was commenced after August 9, 1972. The boiler is subject to 401 CFR 60, Subpart Dc, Standards of performance for small industrial-commercial-institutional steam generating units, through 401 KAR 60:005, 40 CFR Part 60 standards of performance for new stationary sources, because the boiler was commenced after June 9, 1989 and the heat input capacity of the boiler is greater than ten million BTU/hr.

401 KAR 59:010, New process operation, doesn't apply to EP09, the storage of compressed gases, or to the water deionization treatment cell because no particulate matter is separated from the process materials. Therefore, EP09, the storage of compressed gases, and the water deionization treatment cell are not an affected facilities as defined in 59:010.

401 KAR 59:010, New process operation, doesn't apply to EP11, EP12, or the "bench-scale" lab because the units are not part of a process operation.

The fork trucks are regulated as mobile sources and as such are not regulated by any stationary source regulations.

PERIODIC MONITORING

Even without controls, low mass and opacity evolution typical of welding and cutting will result in little chance of violating a 401 KAR 59:010 standard at EP01 and EP04. However, these emission points are controlled by filter units and the work structure. If the filter units are operated and maintained properly, it is reasonable to assume that mass and opacity emissions will be well below 401 KAR 59:010 standards. As a result of this reasoning, only proper maintenance and operation will be required to satisfy continuous compliance requirements.

Even without controls, low mass and opacity evolution typical of welding will result in little chance of violating a 401 KAR 59:010 standard at EP05. However, the emission point is controlled by HEPA filters that are vented back into the work environment. If mass and opacity problems occur, they will undoubtedly be fixed immediately to allow for worker operation and protection. As a result of this reasoning, no conditions are necessary to satisfy continuous compliance requirements as long as the emissions are vented into the work environment.

Oil is applied at EP02 but it is confined well. Due to the nature of the processes, there is practically no chance for violating a 401 KAR 59:010 standard at EP02 if proper maintenance and operation is performed.

PERIODIC MONITORING (CONTINUED)

At EP03 emissions will result from burners and cleaner usage. Use of natural gas will result in low emissions from the burners. Cleaners are well confined. Proper maintenance and operation will result in no practical chance for violating a 401 KAR 59:010 standard at EP03.

Based on AP-40 guidance, the cleaning pretreatment performed at EP06 will have emissions that are inoffensive and negligible in volume. Therefore, there is no practical chance for violating a 401 KAR 59:010 standard if operated properly.

At EP07 and EP13, coating is performed by an electrodeposition dip process. This has no potential for producing particulate emissions. The combustion of natural gas during drying will produce minimal particulate emissions. Proper maintenance and operation will assure compliance with 401 KAR 59:010 standards. Since VOC and HAP emissions are uncontrolled and unregulated, there is only an inventory need. Inventory will not require monitoring of any parameters other than usage.

Use of natural gas or propane will assure compliance with 401 KAR 59:015 requirements at EP08.

No monitoring is required for trivial activities such as maintenance welding.

All other points have no applicable regulations and therefore require no monitoring.

EMISSION AND OPERATING CAPS DESCRIPTION:

EP13 has precluded applicability of a case-by-case MACT for miscellaneous metal parts by taking emission and operating limitations for HAP emissions. HAP emissions at EP13 are limited to 9.3 ton/yr.

Additionally, 401 KAR 59:010 and 401 KAR 59:015 limits exist.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or record keeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.